**WATER RESOURCES RESEARCH GRANT PROPOSAL**

**Project ID**: ID4521

**Title**: Statistical Model Development for Predicting Winter and Spring Precipitation Over Northern Idaho

**Focus Categories**: Climatological Processes, Hydrology

**Keywords**: Climate Variability; Rainfall; Snow and Sea Surface Temperatures

**Start Date**: 03/01/2001

**End Date**: 02/28/2002

**Federal Funds**: $11,740

**Non-Federal Matching Funds**: $29,880

**Congressional District**: 1

**Principal Investigator**:
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**Abstract**

Winter precipitation in Idaho has experienced large variations and trends in recent decades. Sea surface temperature (SST) anomaly over the eastern tropical Pacific Ocean, the El Nino condition, has been found to significantly influence Idaho winter precipitation. In addition, recent studies suggest that SSTs over the northern Pacific are also closely associated with surface climate over the Pacific Northwest. El Nino occurs every two to seven years while the northern Pacific SST anomaly exhibits decadal time scale variations. Idaho has a diversity of climate regimes and regional variation patterns. Each region is thought to have a unique connection to each of these two Pacific SST variations. However, the regional patterns and time scales of the connections between precipitation in Idaho and Pacific SST conditions have not been researched.

A large part of Idaho's precipitation falls in winter. Farmers, ranchers, ski resort managers, fishermen, transportation departments, and electric utility companies need realistic predictions of seasonal precipitation to make accurate plans and financial forecasts. Given the fact that El Nino can be predicted with a fair degree of accuracy, it would be possible to more accurately predict winter precipitation if relationships between Idaho's precipitation and Pacific SST anomalies were established. Idaho's economy would benefit greatly from improved precipitation prediction.